



Log No. 165

TAG Revision 7/23/21

STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

Washington State Energy Code Development Standard Energy Code Proposal Form

Code being amended: ☐ Commercial Provisions ☐ Residential Provisions

Code Section # C403.3.5.1

Brief Description:

Increase ERV effectiveness to 60% enthalpy (except for hotel & multifamily occupancies which can still use 60% sensible) and limit main exception to spaces smaller than 650 sf.

(Note: Change to 15 occ/1000 sf in exception 1c only required if that change is made elsewhere.)

Proposed code change text: (Copy the existing text from the Integrated Draft, linked above, and then use underline for new text and ~~strikeout~~ for text to be deleted.)

C403.3.5.1 Energy recovery ventilation with DOAS. The DOAS shall include *energy recovery ventilation*. The energy recovery system shall have a ((60-68 percent minimum sensible recovery effectiveness or have 59)) 60 percent enthalpy recovery effectiveness in accordance with Section C403.7.6. For DOAS having a total fan system motor nameplate hp less than 5 hp, total combined fan power shall not exceed 1 W/cfm of outdoor air. For DOAS having a total fan system motor hp greater than or equal to 5 hp, refer to fan power limitations of Section C403.8.1. This fan power restriction applies to each dedicated outdoor air unit in the permitted project, but does not include the fan power associated with the zonal heating/cooling equipment. The airflow rate thresholds for energy recovery requirements in Tables C403.7.6(1) and C403.7.6(2) do not apply.

Exceptions:

1. Occupied spaces with all of the following characteristics:
 - a. complying with Section C403.7.6
 - b. served by equipment less than 5000 cfm
 - c. with an average occupant load ((greater than 25)) 15 people or greater people per 1000 square feet (93 m²) of floor area (as established in Table 403.3.1.1 of the *International Mechanical Code*)
 - d. that include demand control ventilation configured to reduce outdoor air by at least 50% below design minimum ventilation rates when the actual occupancy of the space served by the system is less than the design occupancy.
 - e. that are smaller than 650 square feet
2. Systems installed for the sole purpose of providing makeup air for systems exhausting toxic, flammable, paint, or corrosive fumes or dust, dryer exhaust, or commercial kitchen hoods used for collecting and removing grease vapors and smoke.
3. The energy recovery systems for R-1 and Group R-2 occupancies are permitted to provide 60 percent minimum sensible heat recovery effectiveness in lieu of 60-68 percent enthalpy sensible recovery effectiveness. The return/exhaust air stream temperature for heat recovery device selection shall be 70°F or as determined by an approved calculation procedure.

Purpose of code change:

Improve heat recovery effectiveness for non-residential occupancies, taking advantage of commonly available ERV equipment. Eliminate DCV exception for spaces larger than 650 sf.

Your amendment must meet one of the following criteria. Select at least one:

- ☐ Addresses a critical life/safety need.
 ☐ Consistency with state or federal regulations.
- ☐ The amendment clarifies the intent or application of the code.
 ☐ Addresses a unique character of the state.
- ☒ Addresses a specific state policy or statute.
 (Note that energy conservation is a state policy)
 ☐ Corrects errors and omissions.

Check the building types that would be impacted by your code change:

- ☐ Single family/duplex/townhome
 ☐ Multi-family 4 + stories
 ☒ Institutional
- ☐ Multi-family 1 – 3 stories
 ☒ Commercial / Retail
 ☐ Industrial

Your name	Duane Jonlin	Email address	duane.jonlin@seattle.gov
Your organization	City of Seattle	Phone number	206-233-2781
Other contact name -			

Economic Impact Data Sheet

Briefly summarize your proposal's primary economic impacts and benefits to building owners, tenants and businesses.

Will slightly increase costs for ERVs in non-residential occupancies that require DOAS, and will add energy recovery to larger spaces that have DCV. This will decrease heating and cooling costs.

Provide your best estimate of the construction cost (or cost savings) of your code change proposal? (See OFM Life Cycle Cost [Analysis tool](#) and [Instructions](#); use these [Inputs](#). **Webinars on the tool can be found [Here](#) and [Here](#)**)

\$0.10/square foot

Show calculations here, and list sources for costs/savings, or attach backup data pages

Add \$10,000 for HVAC cost to 100,000 sf building.

Provide your best estimate of the annual energy savings (or additional energy use) for your code change proposal?

Click here to enter text.KWH/ square foot

Show calculations here, and list sources for energy savings estimates, or attach backup data pages

Reduce annual HVAC energy usage by 2%

$50 \text{ EUI} \times 0.02/3.4 = 0.3 \text{ KWH/sf/yr @ } \$0.11 = \$0.03/\text{sf}$

If HVAC usage is 1/3 of total energy usage, $0.03/3 = \text{\textbf{\$0.01/sf}}$

List any code enforcement time for additional plan review or inspections that your proposal will require, in hours per permit application: (none)

All questions must be answered to be considered complete. Incomplete proposals will not be accepted.